



6SJ7  
6SJ7-GT

# 6 SJ7, 6SJ7-GT SHARP-CUTOFF PENTODE

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage . . . . . 6.3 . . . . . ac or dc volts  
Current . . . . . 0.3 . . . . . amp

Direct Interelectrode Capacitances:

Pentode Connection:	6SJ7 <sup>o</sup>	6SJ7-GT <sup>oo</sup>	
Grid No.1 to Plate . . . . .	0.005 max.	0.005 max.	μμf ←
Input . . . . .	6	7	μμf ←
Output . . . . .	7	7	μμf ←
Triode Connection: <sup>*</sup>			
Grid No.1 to Plate . . . . .	2.8	2.8	μμf ←
Grid No.1 to Cathode . . . . .	3.4	3.4	μμf ←
Plate to Cathode . . . . .	11	11	μμf ←

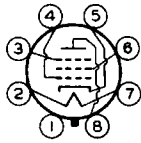
<sup>o</sup> With shell connected to cathode.  
<sup>oo</sup> With external shield connected to cathode.  
<sup>\*</sup> With grid No.2 and grid No.3 connected to plate.

### Mechanical:

Mounting Position . . . . .	Any	Any
Maximum Overall Length . . . . .	2-5/8"	3-5/16"
Maximum Seated Length . . . . .	2-1/16"	2-3/4"
Maximum Diameter . . . . .	1-5/16"	1-5/16"
Bulb . . . . .	Metal Shell, MT8G	T-9
Base . . . . .	{ Small-Wafer Octal 8-Pin	Sm.-Wafer Octal 8-Pin, Sleeve GT-8N
Basing Designation . . . . .	8N	

### BOTTOM VIEW

Pin 1 { 6SJ7, Shell  
6SJ7-GT,  
Base Sleeve  
Pin 2 - Heater  
Pin 3 - Grid No.3



Pin 4 - Grid No.1  
Pin 5 - Cathode  
Pin 6 - Grid No.2  
Pin 7 - Heater  
Pin 8 - Plate

### AMPLIFIER - Class A<sub>1</sub> Pentode Connection

Maximum Ratings, Design-Center Values:

PLATE VOLTAGE . . . . .	300 max.	volts
GRID-No.2 (SCREEN) VOLTAGE . . . . .	125 max.	volts
GRID-No.2 SUPPLY VOLTAGE . . . . .	300 max.	volts
PLATE DISSIPATION . . . . .	2.5 max.	watts ←
GRID-No.2 DISSIPATION . . . . .	0.7 max.	watt ←
GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Positive bias value . . . . .	0 max.	volts ←
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode . . . . .	90 max.	volts ←
Heater positive with respect to cathode . . . . .	90 max.	volts ←

← Indicates a change.

6SJ7  
6SJ7-GT



# 6SJ7, 6SJ7-GT

## SHARP-CUTOFF PENTODE

### Typical Operation and Characteristics:

Plate voltage. . . . .	100	250	..	volts
Grid No.3 (Suppressor) . . . . .	Connected to cathode at socket			
Grid-No.2 Voltage. . . . .	100	100	..	volts
Grid-No.1 Voltage. . . . .	-3	-3	..	volts
Plate Resistance (Approx.) . . . . .	0.7	#	..	megohm
Transconductance . . . . .	1575	1650	..	$\mu$ hos
Grid-No.1 Bias (Approx.) for plate current of 10 $\mu$ amp . . . . .	-8	-8	..	volts
Plate Current. . . . .	2.9	3.0	..	ma
Grid-No.2 Current. . . . .	0.9	0.8	..	ma

### Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . .	1 max.	megohm
--	--------	--------

### AMPLIFIER - Class A<sub>1</sub>

*Triode Connection - Grids No.2 and No.3 Connected to Plate*

### Maximum Ratings, Design-Center Values:

PLATE VOLTAGE. . . . .	250 max.	volts
PLATE DISSIPATION (Total). . . . .	2.5 max.	watts
GRID-No.1 VOLTAGE:		
Positive bias value. . . . .	0 max.	volts
→ PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	90 max.	volts
Heater positive with respect to cathode.	90 max.	volts

### Typical Operation and Characteristics:

Plate Voltage. . . . .	180	250	..	volts
Grid-No.1 Voltage. . . . .	-6	-8.5	..	volts
Amplification Factor . . . . .	19	19		
Plate Resistance (Approx.) . . . . .	8250	7600	..	ohms
Transconductance . . . . .	2300	2500	..	$\mu$ hos
Plate Current. . . . .	6.0	9.2	..	ma

### Maximum Circuit Values:

Grid-No.1-Circuit Resistance . . . . .	1 max.	megohm
--	--------	--------

# Greater than 1 megohm.

*For additional data, see RESISTANCE-COUPLED AMPLIFIER CHART at the front of this Section*

→Indicates a change.

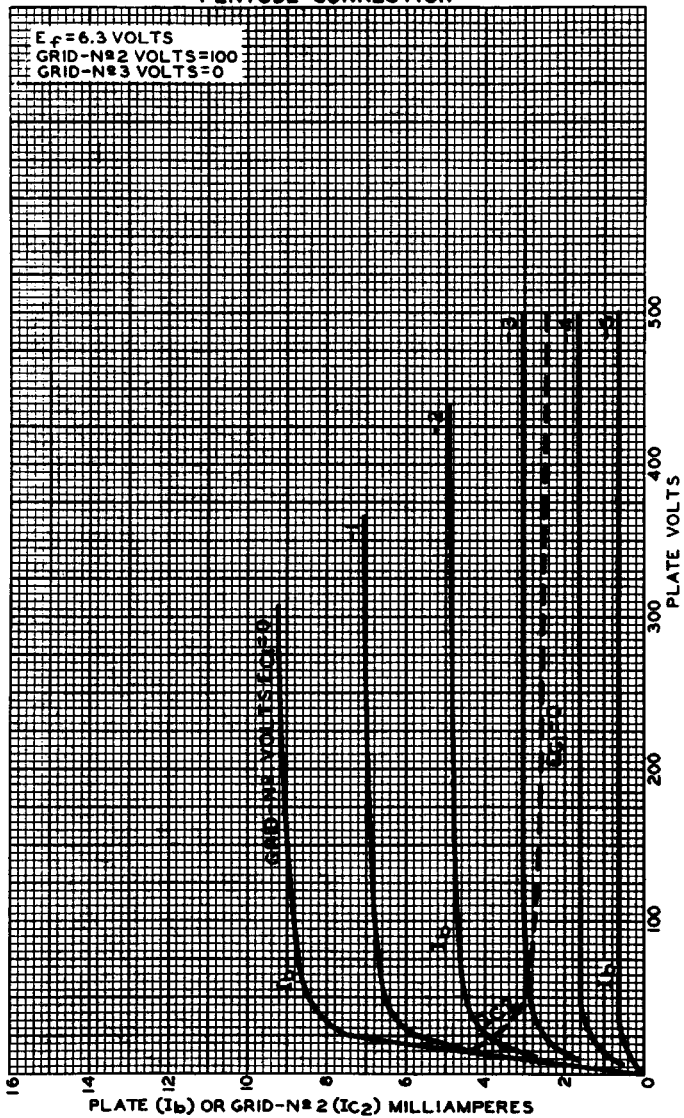


6SJ7

6SJ7

# AVERAGE PLATE CHARACTERISTICS PENTODE CONNECTION

$E_f = 6.3$  VOLTS  
GRID-N $\#$ 2 VOLTS = 100  
GRID-N $\#$ 3 VOLTS = 0



6SJ7

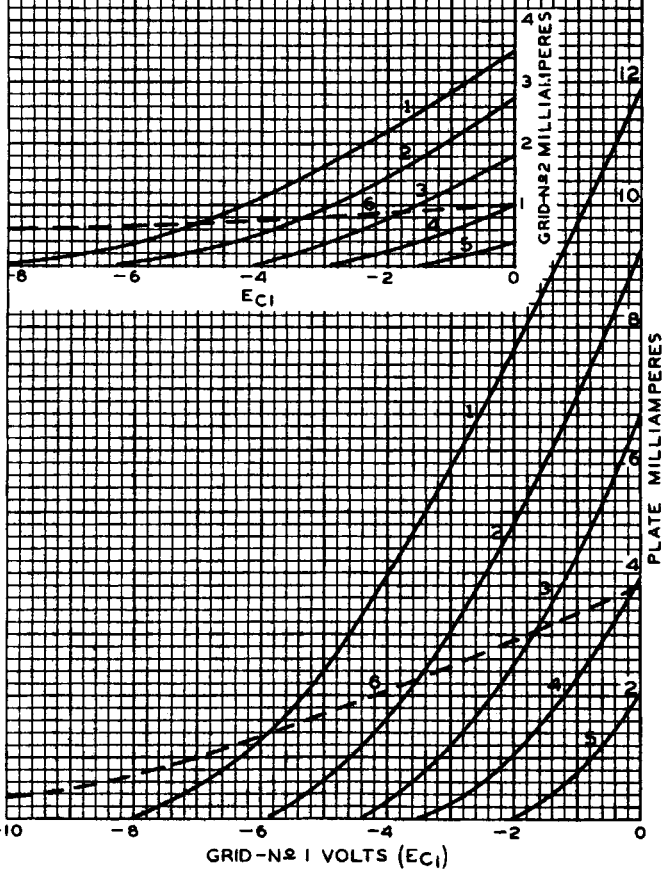


6SJ7

AVERAGE CHARACTERISTICS  
PENTODE CONNECTION

$E_f = 6.3$  VOLTS      PLATE VOLTS = 300      GRID-N#3 VOLTS = 0

CURVE	GRID-N#2 SUPPLY VOLTS	SERIES GRID-N#2 RESISTOR-OHMS
1	125	—
2	100	—
3	75	—
4	50	—
5	25	—
6	300	250000



MARCH 5, 1948

TUBE DEPARTMENT  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-64 43R1



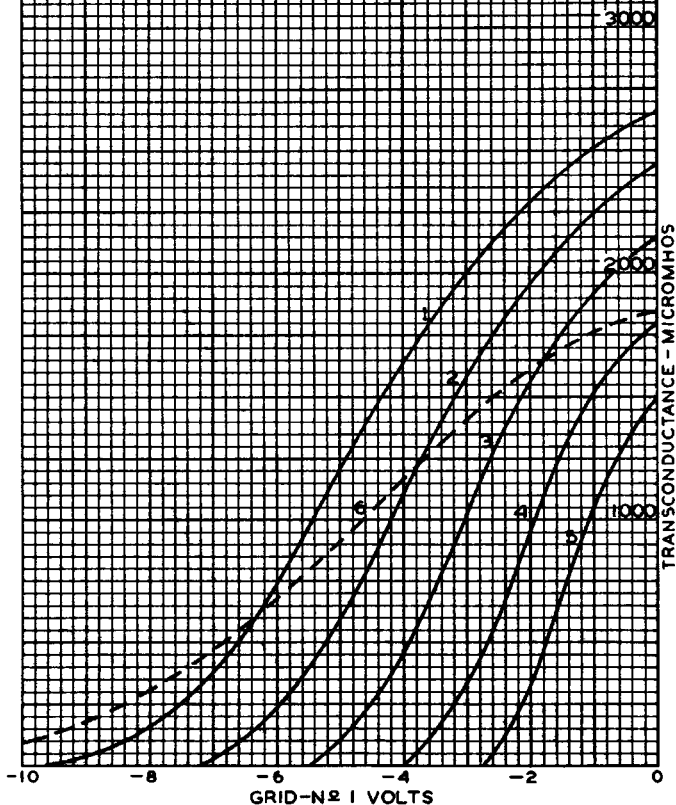
6SJ7

### AVERAGE CHARACTERISTICS PENTODE CONNECTION

6SJ7

$E_f = 6.3$  VOLTS    PLATE VOLTS = 300    GRID-N $\neq$ 3 VOLTS = 0

CURVE	GRID-N $\neq$ 2-SUPPLY VOLTS	SERIES GRID-N $\neq$ 2 RESISTOR-OHMS
1	125	—
2	100	—
3	75	—
4	50	—
5	25	—
6	300	250000



6SJ7

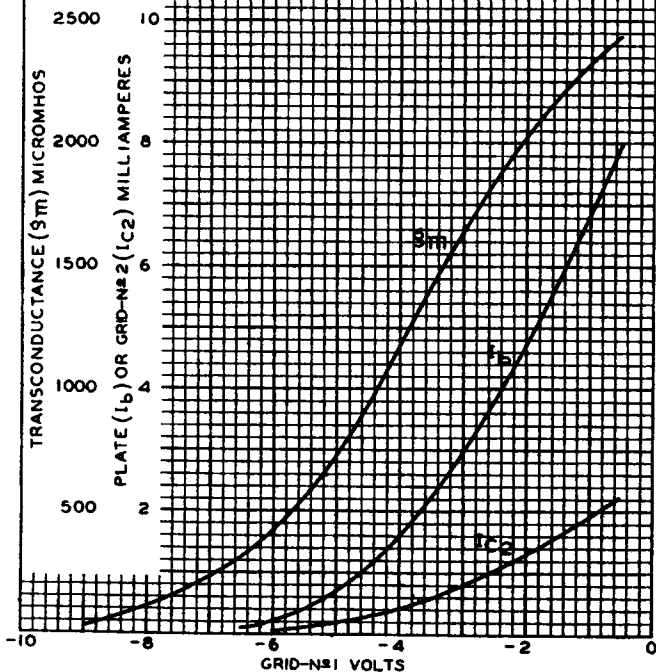


6SJ7

### AVERAGE CHARACTERISTICS PENTODE CONNECTION

$E_f = 6.3$  VOLTS  
GRID-N $\#$ 3 VOLTS = 0

PLATE VOLTS = 250  
GRID-N $\#$ 2 VOLTS = 100



MARCH 5, 1948

TUBE DEPARTMENT  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-4937 RI



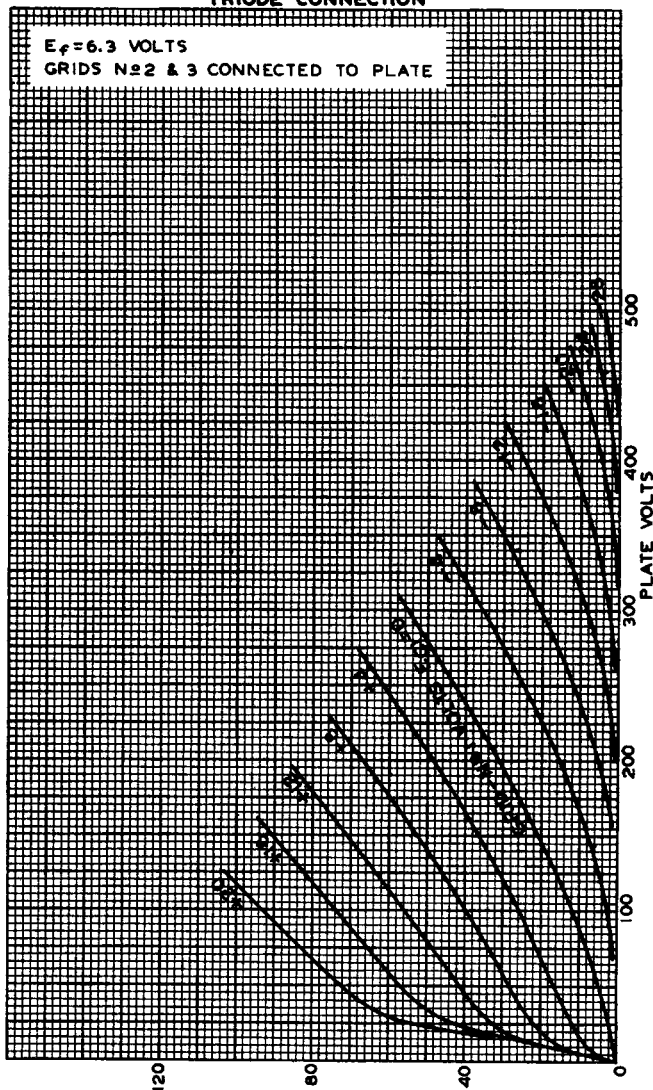
6SJ7

6SJ7

# AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION

$E_f = 6.3$  VOLTS

GRIDS No 2 & 3 CONNECTED TO PLATE



120

80

40

100

200

300

400

500

PLATE VOLTS

PLATE MILLIAMPERES

MAY 12, 1948

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6409R1